## REMARKS

### *RCE and Suspension of Action under 37 CFR §1.103(c)*

This Amendment accompanies a Request for Continued Examination (RCE), a request for a one month Suspension of Action, and all associated fees. Applicants believe that no additional fees are required. However, the Commissioner is authorized to charge our Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayment.

### *Allowable Subject Matter*

With reference to the Examiner's Answer dated December 23, 2005, Applicants respectfully note the Examiner's prior indication that dependent claims 5 and 13 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicants appreciate the Examiner's indication of allowable subject matter, but Applicants remain convinced that the broader scope of claims 1 and 10 is patentable.

### *Claims*

Upon entry of this Amendment, claims 1-8 and 10-16 remain pending in the application with claims 1 and 10 being independent. Claims 9 and 17 have been previously canceled. Claims 1 and 10 are currently amended. No claims have been added. Reconsideration is respectfully requested.

### *Claim Rejections – 35 U.S.C. §102(e)*

After the decision from the Board of Patent Appeals and Interferences, claims 1, 2, 4, 6, 7, 10, 11, 14, and 15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Fuller et al. (U.S. Patent No. 6,743,468). Applicants respectfully submit that the subject matter in Fuller et al. that is relied upon by the Examiner to reject the subject application is actually the work of the inventors of the subject application. As a result, Applicants will be submitting, in a timely manner, a 37 CFR §1.132 Affidavit in compliance with MPEP 2136.05 to remove Fuller et al. as prior art.

### *Claim Rejections – 35 U.S.C. §103(a)*

After the decision from the Board of Patent Appeals and Interferences, claims 1-4, 6-8, 10-12, and 14-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Brogan (U.S. Pub. No. 2002/0110682). Applicants respectfully traverse the rejection to independent claim 1. Applicants have amended claim 1 to merely clarify the invention set forth therein.

Claim 1 recites a method for repairing a defect in a surface that is caused by a kinetic spraying process. The kinetically sprayed surface is formed from particles maintained at a temperature *below their melting temperature* during the kinetic spraying process. The method includes applying a repair coating to the defect by thermally spraying a *molten material* on the defect using a thermal spray process selected from the group consisting of a High Velocity Oxy-Fuel combustion thermal spray process, a wire arc thermal spray process, a vacuum plasma thermal spray process, a flame spray thermal process, or a radio frequency plasma thermal spray process. The thermal spray process fills the defect thereby repairing it. The thermal spray process used to fill and repair the defect is different than the kinetic spraying process that caused the defect. The thermal spray process utilizes *molten material* to fill the defect, while the kinetic spraying process utilizes particles maintained at a temperature *below their melting temperature* to form the kinetically sprayed surface that is to be repaired.

Brogan discloses a "thermal spraying" process for transporting a polymer and an aggregate to a surface to provide a non-skid coating to the surface. In paragraph 0029, Brogan suggests that "thermal spraying" encompasses a group of processes including "cold gas dynamic spraying." Brogan also suggests that the term "thermal spraying" is intended to include "spraying of a polymer or polymer particulate with such velocity that its kinetic energy is sufficient to soften/melt the polymer or polymer particulate upon impact" (paragraph 0030) and that "thermal spraying" is "also meant to encompass any known method of depositing an organic containing material, such as a polymer, onto a surface wherein the organic containing material is heated above the ambient temperature to a point where it softens and/or melts…" (paragraph 0030).

Based on the above passages from Brogan, the Examiner has previously stated that Brogan includes kinetic spraying explicitly in his definition of "thermal spraying." Applicants respectfully submit that even if kinetic spraying were properly determined by one skilled in the art to fall within Brogan's definition of "thermal spraying", Brogan still does not teach using two different spraying processes, one to create the surface, and one to repair the surface, as required in claim 1. Nor does Brogan suggest repairing defects *caused by* one of the spraying processes. In claim 1, the surface is created by a kinetic spraying process, which causes a defect, and then the defect is repaired using a different, thermal spraying process. In the kinetic spraying process of claim 1, the particles are *kept below their melting point when sprayed.* In the thermal spraying process of claim 1, the material is first *molten* before being applied to repair the defect. In contrast, Brogan suggests that the coating 10, which is "thermally sprayed" onto the surface, can be repaired when worn or damaged using the *very same* "thermal spraying" process that created the coating 10 in the first place. Brogan does not disclose, teach, or suggest using a different process to apply the repair coating, i.e., another "thermal spraying" process different than the "thermal spraying" process that created the original surface. More specifically, Brogan never suggests creating a kinetically sprayed surface from particles maintained at a temperature *below their melting temperature* and repairing defects in the kinetically sprayed surface using a thermal spray process that utilizes *molten material* to fill the defect. Even more, Brogan fails to disclose repairing defects *caused by kinetic spraying*, as required by claim 1. Therefore, Brogan fails to disclose each and every limitation required in claim 1. As set forth below, Applicants also submit that given the teachings in Brogan, one skilled in the art would not be motivated to modify Brogan to arrive at claim 1.

In creating a kinetically sprayed surface, the formation of a defect is not uncommon. If this defect is not repaired, and the kinetic spraying is continued, the defect continues to expand and consumes a larger portion of the surface. Therefore, it is desirable that once the defect is detected, the defect is repaired prior to continuing to utilize the kinetic spraying process to apply additional coating material. Brogan was not faced with this particular problem. Instead, Brogan was faced with the problem of repairing non-skid surfaces once the surfaces became worn or damaged. Brogan requires heating of the surface prior to applying the repair coating. Brogan specifically states in paragraph 0070 that "worn area 30 is simply heated to a temperature above the melting point of polymer P until surface 10a of coating becomes glossy…the new material melts together with surrounding coating 10, coalescing together to produce a completely restored coating 10, as illustrated in FIG. 4." Although surface heating *could* be employed in some embodiments of the present invention, the invention of claim 1 does not *require* heating the kinetically sprayed surface at the defect to *melt* the surface in order for the repair coating to adhere to the surface. In some embodiments of the present invention, it is desirable to apply the repair coating immediately after the defect forms in the kinetically sprayed surface, without requiring any heating of the kinetically sprayed surface at the defect.

Applicants contend, for the reasons provided above, those skilled in the art, faced with the problem of defects caused by kinetic spraying, would not be motivated to modify Brogan to repair defects caused by kinetic spraying, as suggested by the Examiner. *In re Sang Su Lee*[1] clearly defines how suggestion and motivation are determined, and how the knowledge generally available to one skilled in the art is found. The Federal Circuit, in *In re Sang Su Lee*, reviewed a decision from the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office. Both the Examiner and the Board agreed that Sang Su Lee's invention "would have been obvious to one of ordinary skill in the art since the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software," and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial." *Id.* at 1341. However, the Federal Circuit made it abundantly clear that the Board's and the Examiner's conclusory statements did not adequately address the issue of motivation to modify a reference. The factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. *Id.* at 1343. It is improper, in determining whether a person of ordinary skill would have been led to the Examiner's suggested modification of a reference, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). The court in *In re Sang Su Lee* went on to state that the "common knowledge and common sense" on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements suggesting the motivation of those skilled in the art do not fulfill the agency's obligation. *In re Sang Su Lee*, 277 F.3d at 1342. In other words, conclusory statements suggesting the motivation of those skilled in the art to modify Brogan to repair defects caused by kinetic spraying, such as those made by the Examiner, do not fulfill the agency's obligation.

In summary, Brogan fails to disclose, teach, or suggest using a kinetic spraying process to first create a kinetically sprayed surface formed from particles maintained at a temperature *below their melting temperature*, and then using a different, thermal spraying process, to thermally spray *molten material* on a defect in the surface caused by the kinetic spraying process. Furthermore, absent some objective evidence to the contrary, those skilled in the art would not be motivated to modify the teachings of Brogan to arrive at claim 1. For these reasons, Applicants respectfully submit that independent claim 1 is in condition for allowance. Applicants submit that dependent claims 2-8 are also in condition for allowance based on their own merits, and based on their dependency to independent claim 1 and the failure of the references to suggest claim 1.

Applicants respectfully submit that independent claim 10 is also in condition for allowance based on the reasons previously discussed with respect to independent claim 1. Independent claim 10 recites the limitations of claim 1 and further recites applying an additional kinetically sprayed surface over the repaired defect. Brogan not only fails to disclose using two different processes to create and repair the surface, but Brogan is completely silent as to applying an additional, kinetically sprayed surface over the

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[1] 277 F.3d 1338 (Fed. Cir. 2002).

repaired defect. In independent claim 10, the surface has a defect caused by kinetic spraying, the defect is then repaired using a different, thermal spraying process, and finally, another kinetically sprayed surface is applied over the repaired defect, i.e., over the thermally sprayed area. Therefore, Applicants submit independent claim 10 is in condition for allowance. Applicants further submit that dependent claims 11-16 are also in condition for allowance based on their own merits, and based on their dependency to independent claim 10 and the failure of the references to suggest claim 10.

Applicant believes the application is now in condition for allowance, which allowance is respectfully solicited. Applicant believes that no additional fees are required. However, the Commissioner is authorized to charge our Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayment.

**Respectfully submitted,**
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**Date**

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